

WE CLAIM

1. A method of forming a compound Single Instruction/Multiple Data instruction, said method comprising:
- 5 selecting at least two Single Instruction/Multiple Data operations of a reduced instruction set computing type; and
- combining said at least two Single Instruction/Multiple Data operations to execute in a single instruction cycle to thereby yield the compound Single Instruction/Multiple Data instruction.
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2. The method of claim 1, further comprising:
- evaluating a processing throughput of the compound Single Instruction/Multiple Data instruction; and
- determining a power consumption of the compound Single
- 15 Instruction/Multiple Data instruction.
3. The method of claim 2, further comprising:
- associating an energy consumption value with at least one micro-operation of the compound Single Instruction/Multiple Data instruction;
- 20 and
- minimizing the sum of the energy consumption value.
4. The method of claim 1, wherein the compound Single Instruction/Multiple Data instruction includes a vector add-subtract operation.
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5. The method of claim 1, wherein the compound Single Instruction/Multiple Data instruction includes a vector minimum-difference operation.
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6. The method of claim 1, wherein the compound Single Instruction/Multiple Data instruction includes a vector compare-maximum operation.

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establishing a relative energy database listing a plurality of micro-operations, each micro-operation having an associated relative energy value; and

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